

WHAT IS CLAIMED IS:

1. An X-ray computed tomographic apparatus
wherein image data are reconstructed on the basis of
a plurality of data segments which extend over
5 a plurality of heart beats extracted from data obtained
by scanning a patient with X-rays under helical scan,
comprising:

a setting device which is configured to set a
helical pitch and a rotational speed concerning the
10 helical scan;

a temporal resolution data generation device
which is configured to generate a temporal resolution
of the image data that correspond to the set helical
pitch, the set rotational speed, and a heart rate of
15 the patient;

a screen building device which is configured
to build a scan plan screen that contains the set
helical pitch, the set rotational speed, and the
generated temporal resolution; and

20 a display device which displays the scan plan
screen.

2. An X-ray computed tomographic apparatus as
defined in claim 1, wherein the scan plan screen
contains a graph which expresses a temporal change of
25 the temporal resolution versus a temporal change of the
heart rate of the patient.

3. An X-ray computed tomographic apparatus as

defined in claim 1, wherein the scan plan screen contains a temporal change of the heart rate of the patient.

5 4. An X-ray computed tomographic apparatus as defined in claim 1, wherein the scan plan screen contains a button for obtaining the heart rate of the patient.

10 5. An X-ray computed tomographic apparatus as defined in claim 1, wherein the scan plan screen contains a box for inputting the heart rate of the patient.

6. An X-ray computed tomographic apparatus as defined in claim 1, wherein the heart rate is a mean heart rate or a median within a predetermined period.

15 7. An X-ray computed tomographic apparatus wherein image data are reconstructed on the basis of a plurality of data segments which extend over a plurality of heart beats extracted from data obtained by scanning a patient with X-rays under helical scan, comprising:

20 a selection device which is configured to select a combination in which a temporal resolution of the image data corresponding to a heart rate of the patient becomes the shortest, from among a plurality of combinations of helical pitches and rotational speeds concerning the helical scan as satisfy an upper limit of a scan time;

a screen building device which is configured to build a scan plan screen that contains the selected combination of the helical pitch and the rotational speed, and the shortest temporal resolution; and

5 a display device which displays the scan plan screen.

8. An X-ray computed tomographic apparatus as defined in claim 7, wherein the scan plan screen contains a graph which expresses a temporal change of the temporal resolution versus a temporal change of the heart rate of the patient.

9. An X-ray computed tomographic apparatus as defined in claim 7, wherein the scan plan screen contains a temporal change of the heart rate of the patient.

10. An X-ray computed tomographic apparatus as defined in claim 7, wherein the heart rate is a mean heart rate or a median within a predetermined period.

11. An X-ray computed tomographic apparatus as defined in claim 7, wherein the selection device selects from among the plurality of combinations, a combination in which a temporal average concerning a temporal change of the temporal resolution corresponding to a temporal change of the heart rate within a scheduled breath-hold time period becomes the shortest.

12. An X-ray computed tomographic apparatus as

defined in claim 11, wherein the temporal average is a simple temporal average.

13. An X-ray computed tomographic apparatus as defined in claim 11, wherein the temporal average is a weighted temporal average.

14. An X-ray computed tomographic apparatus wherein image data are reconstructed on the basis of a plurality of data segments which extend over a plurality of heart beats extracted from data obtained by scanning a patient with X-rays under helical scan, comprising:

a generation device which is configured to generate on the basis of a heart rate of the patient, a plurality of temporal resolutions which correspond respectively to a plurality of combinations of helical pitches and rotational speeds concerning the helical scan as satisfy an upper limit of a scan time;

a screen building device which is configured to build a scan plan screen that contains the plurality of combinations of the helical pitches and the rotational speeds, and the plurality of generated temporal resolution; and

a display device which displays the scan plan screen.

15. An X-ray computed tomographic apparatus as defined in claim 14, wherein the scan plan screen contains a graph which expresses a temporal change of

the temporal resolution versus a temporal change of the heart rate of the patient.

16. An X-ray computed tomographic apparatus as defined in claim 14, wherein the scan plan screen
5 contains a temporal change of the heart rate of the patient.

17. An X-ray computed tomographic apparatus as defined in claim 14, wherein the heart rate is a mean heart rate or a median within a predetermined period.

10 18. An X-ray computed tomographic apparatus as defined in claim 14, wherein the generation device generates a temporal average concerning a temporal change of the temporal resolution corresponding to a temporal change of the heart rate within a scheduled
15 breath-hold time period.

19. An X-ray computed tomographic apparatus as defined in claim 18, wherein the temporal average is a simple temporal average.

20 20. An X-ray computed tomographic apparatus as defined in claim 18, wherein the temporal average is a weighted temporal average.